UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,781	10/11/2001	Fred A. Bunn	1875.0660001	7264

26111 7590 01/16/2004		EXAMINER
STERNE, KESSLER, GOLDSTEIN & FOX PLLC		DUONG, OANH L

ART UNIT	PAPER NUMBER
2155	

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DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>*26 September 2003*</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-17* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-17* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5 and 6*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Objections

1.   Claim 14 is objected to because of the following informalities: some typographic

error has been found (e.g., "ussed" in line 2. Appropriate correction is required.

2.   Applicant's arguments with respect to claims 1, 9 and 15 have been considered

but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chapman (US 6,438,123 B1) in view of Mahler et al. (Mahler) (US 6,542,504 B1).

Regarding claim 1, Chapman teaches header suppression over a DOCSIS (data

over cable system interface specification) network (e.g., see abstract and col. 3 lines

50-64). Chapman does not explicitly teach header suppression techniques as claimed.

However, Mahler teaches communicating a plurality of header suppression techniques

and a unique index number assigned to each of the plurality of header suppression

techniques (e.g., see table 2 col. 19 lines 13-14 and col. 20 lines 19-col. 22 lines 35);

receiving a plurality of data packets to be transmitted, and identifying which of the

received data packets have a header that should be suppressed (e.g., see col. 5 lines

61-67); selecting a header suppression technique from the plurality of header

suppression techniques for each of the identified data packets (e.g., see col. 9 lines 19-

24) ; appending a packet header element to each of the identified data packets, the

packet header element containing the index number assigned to the header

suppression technique selected for each of the identified data packets (e.g., see fig. 21

col. 24 lines 4-7); and suppression a header of each of the identified data packets using

header suppression technique selected for each of the identified data packets (e.g. see

col. 5 lines 61-67 and col. 9 line 65-col. 10 line 40). Therefore, it would have been

obvious to a person of ordinary skill in the art at the time the invention was made to

combine header suppression scheme in Chapman as taught by Mahler because such

header suppression scheme would use only a small amount of state and require no

update state between endpoints. Thus, packets would have been efficiently transmitted

between two link terminators (Mahler, col. 3 line 19-20).

Regarding claim 2, Chapman/Mahler teaches concatenating each data packet

within a single DOCSIS transmit burst and transmitting the burst to a CMTS (Chapman,

see col. 8 lines 33-52); and a mixed protocol burst (Mahler, e.g., see col. 19 line13-14

and col. 21 lines 7-14).

Regarding claim 3, Chapman/Mahler teaches each of the received packets is

identified for suppression (Chapman, e.g., see col. 8 lines 3-6); having a header that

should be suppressed in said identifying step (Mahler e.g., see col. 9 lines 19-24).

Regarding claim 4, Chapman/Mahler teaches DOCSIS protocol header

compression is selected (Chapman, see col. 11 lines 47-54).

Regarding claim 5, Chapman/Mahler teaches each of the received data packets that are IP/RTP packets with dynamically changing pattern are identified (Chapman, see col. 6 lines 20-27); having a header that should be suppressed in said identifying step (Mahler e.g., see col. 9 lines 19-24).

Regarding claim 6, Chapman/Mahler teaches RTP suppression is selected for each of the received data packets that are IP/RTP packets with dynamically changing patterns (Chapman, e.g., see col. 6 lines 20-27 and lines 37-42).

Regarding claim 7, Chapman/Mahler teaches each of the received data packets that are IP/TCP variable length packets are identified as having a header that should be suppressed (Mahler, e.g., see col. 2 lines 9-15 and col. 9 lines 19-24)

Regarding claim 8, Chapman/Mahler teaches dynamic delta encoding suppression (Mahler, e.g., see col. 5 lines 48-67).

Regarding claim 9, Chapman teaches expanding data packet headers transmitted over Data Over Cable Service Interface Specification (DOCSIS) network (col. 6 line 63-col. 7 line 12). Chapman does not explicitly teach suppressed/de-suppressed header scheme as claimed. However, Mahler teaches receiving a mixed protocol burst comprised of one or more data packet having headers suppressed in according with a selected one of a plurality of header suppression techniques (e.g., see col. 5 lines 61-67 and col. 9 line 66-col. 10 line 16); identifying each data packet within the mixed protocol burst that has a suppressed header (e.g., see col. 25 lines 23-24 and 32-34); searching a lookup table to select a set of rules from a plurality of sets of rules for expanding a suppressed header of each of data packets, and expanding a

suppressed header of each of the data packets identified according to a set of rules

identified (e.g., see col. 6 lines 17-23 and col. 14 line 10-col. 16 line 30). Therefore, it

would have been obvious to a person of ordinary skill in the art at the time the invention

was made to combine header suppressing/de-suppressing scheme in Chapman as

taught by Mahler because such header suppressing/de-suppressing scheme would use

only a small amount of state and require no update state between endpoints. Thus,

packets would have been efficiently transmitted between two link terminators (Mahler,

col. 3 line 19-20).

Regarding claim 10, Chapman/Mahler teaches an appended header element

containing an index number (Chapman, e.g., see col. 6 line 63-col. 7 line12).

Regarding claim 11, Chapman/Mahler teaches using index numbers contained in

each appended packet header element to search the lookup table (see Chapman e.g.,

see col. 4 lines 65-67).

Regarding claim 12, Chapman/Mahler discloses DOCSIS protocol header

expansion rules are used (Chapman, e.g., see col. 11 lines 52-54).

Regarding claim 13, Chapman/Mahler discloses RTP expansion rules are used

(Chapman, e.g., see col. 6 line 14-col. 7 line12).

Regarding claim 14, Chapman/Mahler teaches Dynamic delta encoding

expansion rule are used for IP/TCP variable length packets (Mahler, e.g., see col. 2

lines 9-15, col. 5 lines 48-67, col. 6 lines 17-23, col. 9 lines 19-24 and col. 14 line 10-col.

16 line 30).

Regarding claim 15, Chapman teaches header suppress technique over a

DOCSIS (data over cable system interface specification) network (e.g., see abstract and

col. 3 lines 50-64); one or more cables modems that suppress data packet header (e.g.,

see col. 6 lines 17-19); and a cable modem termination system (CMTS) enabled to

expand said data packets headers (e.g., see col. 6 lines 17-19). Chapman does not

explicitly teach header suppressing/de-suppressing scheme as claimed. However,

Mahler teaches selectively using one of a plurality of header suppression techniques

(e.g., see col. 9 lines 19-24); and using a set of expansion rules corresponding to said

selected one of said plurality of header suppression techniques (e.g., see col. 6 lines

17-23 and col. 14 line 10-col. 16 line 30) wherein a unique index number is assigned to

each of said plurality of header suppression techniques (e.g., see table 2 col. 19 lines

13-14 and col. 20 lines 19-col. 22 lines 35). Therefore, it would have been obvious to a

person of ordinary skill in the art at the time the invention was made to combine header

suppressing/de-suppressing scheme in Chapman as taught by Mahler because such

header suppressing/de-suppressing scheme would use only a small amount of state

and require no update state between endpoints. Thus, packets would have been

efficiently transmitted between two link terminators (Mahler, col. 3 line 19-20).

Regarding claim 16, Chapman/Mahler teaches one or more cable modems

appends a packet header element to each data packet having a suppressed header

(Chapman, e.g., see col. 6 lines 46-62); packet header element includes said one or

more index number assigned to the header suppression technique used to suppress

each data packet (Mahler, (e.g., e.g., see table 2 col. 19 lines 13-14 and col. 20 lines

19-col. 22 lines 35);

Regarding claim 17, Chapman/Mahler teaches one or more cable modems

concatenates each data packet having a suppressed header into to a single DOCSIS

transmit burst (Chapman, e.g., see col. 8 lines 33-52); and to form a mixed protocol

burst (Mahler, e.g., see col. 19 line13-14 and col. 21 lines 7-14).

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Oanh L. Duong whose telephone number is (703) 305-

0295. The examiner can normally be reached on Monday- Friday, 8:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hosain T. Alam can be reached on (703) 308-6662. The fax phone number

for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

O.D
January 9, 2004

**HOSAIN ALAM
SUPERVISORY PATENT EXAMINER**